

## **REMARKS**

### ***Priority***

The Examiner has indicated that the subject application is properly identified as a divisional application. Applicant has amended the cross reference to the related applications to indicate that the subject application is a divisional application. Applicant respectfully requests the Examiner to update all pertinent records at the USPTO accordingly.

### ***Claims***

Claims 49, 52, and 55-61 are pending in the application with claims 49, 52, 55, 56 and 61 being independent. Claims 1-48, 50, 51, 53, and 54 have been canceled. Claims 49, 52, and 55 are currently amended. Claims 56-61 have been added. Reconsideration is respectfully requested.

### ***Allowed Claims***

Applicant appreciates and accepts the Examiner's allowance of independent claim 55. Applicant has made minor amendments to claim 55 for clarity. The Examiner has objected to dependent claims 52-54 as being dependent upon a rejected base claim, but has indicated that these claims would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. Applicant has rewritten dependent claim 52 into independent form to generally include the limitations of the base claim and all limitations that the Applicant believes are required for the novelty and non-obviousness of claim 52. Applicant has removed any recitation of the quick release connector and instead recites only the release button used to lock and unlock the mixing blade to and from the handle. The prior art references fail to disclose such a claimed mechanism, as detailed below. Therefore, Applicant respectfully submits that claim 52 is now in condition for allowance.

***Claim Rejections – 35 U.S.C. §102(b)***

Claims 49-51 stand rejected under 35 U.S.C. §102(b) as being anticipated by Baur et al. (U.S. Patent No. 4,197,967). Claim 49 has been amended to clarify the invention as originally claimed and to overcome the rejection to claim 49. Claims 50 and 51 have been canceled.

The invention as claimed in claim 49 defines over the cited prior art or any combination thereof by reciting a mixing apparatus comprising a cartridge forming an interior cavity 40 and having an aperture. A handle 120 extends through the aperture. The handle 120 has a first end and a second end. A mixing blade 128 is removably coupled to the first end of the handle 120 in the interior cavity 40. A quick-release connector 142 operates between the handle 120 and the mixing blade 128. A release button 144 is disposed outside of the interior cavity 40 and moves between a locked position and an unlocked position to operate the quick-release connector 142. The mixing blade 128 is removable from the handle 120 when the release button 144 is in the unlocked position and is locked to the handle 120 when the release button 144 is in the locked position.

Baur et al. discloses an extrusion cartridge with an interior cavity and a mixing piston 5 disposed in the interior cavity to mix the components. A mixing rod 8 threadably engages the mixing piston 5 to move the mixing piston 5. Baur et al. does not disclose a release button for operating a quick-release connector to release the mixing piston 5 from the mixing rod 8, as required by claim 49. The Examiner states that the threads of the mixing rod 8 and the mixing piston 5 act as a quick-release connector. However, even if the threaded engagement were properly characterized as a quick-release connection, Baur et al. still fails to disclose any release button for operating the connector, as required by claim 49. Therefore, Applicant respectfully submits that claim 49 is in condition for allowance. Applicant also submits that the remaining pending claims, namely claims 52 and 55-61 are also in condition for allowance for their recitation of a release button.

***Claim Rejections – 35 U.S.C. §103(a)***

Claims 49-51 stand rejected under 35 U.S.C. §103(a) as being unpatentable over McCord et al. (U.S. Patent No. 4,010,934) in view of Maurer (U.S. Patent No. 4,547,076). Claim 49 has been amended to clarify the invention as originally claimed and to overcome the rejection to claim 49. Claims 50 and 51 have been canceled.

The invention as claimed in claim 49 defines over the cited prior art or any combination thereof by reciting a mixing apparatus comprising a cartridge forming an interior cavity 40 and having an aperture. A handle 120 extends through the aperture. The handle 120 has a first end and a second end. A mixing blade 128 is removably coupled to the first end of the handle 120 in the interior cavity 40. A quick-release connector 142 operates between the handle 120 and the mixing blade 128. A release button 144 is disposed outside of the interior cavity 40 and moves between a locked position and an unlocked position to operate the quick-release connector 142. The mixing blade 128 is removable from the handle 120 when the release button 144 is in the unlocked position and is locked to the handle 120 when the release button 144 is in the locked position.

McCord et al. discloses a mixing container 1 with an impeller 22 fixed to a mixing shaft 31 inside the container 1. The impeller 22 is used to mix components inside the container 1. The impeller 22 is fixed to the mixing shaft by a pin 32. McCord et al. does not provide any manner of removing the pin 32, other than manually striking or grasping the pin inside the container, thus McCord et al. does not suggest a quick-release connector, or a release button for operating the quick-release connector, as required by claim 49. For this reason, the Examiner has added the teachings of Maurer to McCord et al. to arrive at the invention set forth in claim 49. Maurer discloses a container 12 with a mixing blade 11 disposed in the container for mixing components therein. The mixing blade 11 is connected to a mixing shaft 16 by a bayonet connection. The bayonet connection is in the form of a radially projecting tang 19 of the mixing shaft 16 received in an L-shaped slot in the mixing blade 11. However, Maurer does not disclose a release button for operating the bayonet connection. Instead, either the mixing shaft 16 or the mixing blade 11 must be held in position manually, while the other is rotated to release

the mixing blade 11 from the mixing shaft 16.

The release button 144 recited in claim 49 and the remaining pending claims is used to operate the quick-release connector 142 such that, for example, the mixing blade 128 can be released from the handle 120 to remain in the interior cavity without requiring any direct physical contact of the mixing blade 128. In the medical/surgical arts bone cement is often injected into anatomical sites within a patient. As a result, the bone cement must remain sterile and not be exposed to outside contaminants. By providing a release button outside of the mixing cavity, i.e., outside the interior cavity, a user can release the mixing blade 128 inside the interior cavity without having to physically contact the mixing blade 128 or the bone cement to be injected. None of the prior art references, including McCord et al. and Maurer teach or suggest using a release button to operate a quick-release connector, as required by claim 49, for such a purpose as releasing a mixing blade in a cartridge without physically contacting or restraining the mixing blade. As a result, Applicant respectfully submits that independent claim 49 is in condition for allowance. Applicant also submits that the remaining pending claims, namely claims 52 and 55-61 are also in condition for allowance for their recitation of a release button.

Applicant: Jared P. Coffeen et al.  
Serial No.: 10/801,748  
Amendment Dated: September 20, 2005  
Office Action Dated: June 21, 2005  
Page 12 of 12



Applicant believes the application is now in condition for allowance, which allowance is respectfully solicited. Applicant believes that no additional fees are required, however, the Commissioner is authorized to charge our Deposit Account No. 08-2789 for any additional fees or credit the account for any overpayment.

Respectfully submitted,

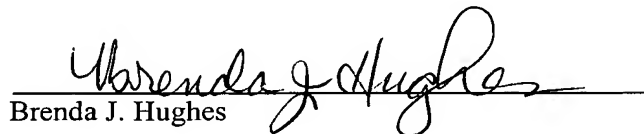
**HOWARD & HOWARD ATTORNEYS, P.C.**

September 20, 2005  
Date

  
Trent K. English, Registration No.: 56,951  
The Pinehurst Office Center, Suite #101  
39400 Woodward Avenue  
Bloomfield Hills, MI 48304-5151  
(248) 723-0462

**CERTIFICATE OF MAILING**

I hereby certify that this **Amendment, check for \$400.00 and return post card** are being deposited with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed to the **MAILSTOP AMENDMENT, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450**, on September 20, 2005.

  
Brenda J. Hughes